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Big in design, bigger in sustainability

DAZ MANAN and AMALINA KAMAL look at existing and future buildings that take into consideration the Earth's fragile status

THE architectural arena has certainly entered a new age. Today, we are keen to see high-performing buildings that inspire us whilst also helping the environment. Indeed, we expect our mighty and celebrated structural developments to deliver far more than just a place to work or live. In keeping with our “green” theme, we take a look at buildings that take efficiency to a whole new level, making them great examples of sustainability.

BENCHMARK FOR SMART ENERGY

Completed in 2009 and named after its structural form, the Diamond Building in Putrajaya is the headquarters of the Energy Commission.

The building's design approach focuses on energy efficiency, water efficiency, optimum indoor environment quality and environmental protection. Indeed, the eight-storey building's energy-efficient qualities led to it being awarded top prize at the ASEAN Energy Awards in 2012. The award is presented by the ASEAN Centre for Energy.

Every design feature of the building has a sound purpose, from its shape to its orientation. According to the building's specifications, the Diamond Building is oriented in accordance with the solar path (the rising and the setting of the sun) to minimise the sun's glaring rays.

The tilting façade of the building is angled at 25° outwards to create a self-shading feature that helps prevent direct sunlight from entering it.

“The office's diamond or inverted pyramid-like profile creates a smaller building footprint, thus enabling landscaping to take place,” shares head of administration and facilities management Hamidah Abdul Rashid.

She also notes that the sunken garden area located at the basement serves as a void space, which provides

natural ventilation to the parking area at the basement level.

The building also has 874 photovoltaic panels situated on the roof to help reduce energy usage by 65 per cent.

“Lighting throughout the building is both natural and artificial but most of the indoor workstations are lit by the light that comes in through the dome skylight (the top part of the atrium),” she says, adding that no blackout type partitions are used to make sure that natural light hits every desk.

Other key green features of the building include its water efficient system and radiant cooling system. “Rainwater is harvested and used for toilet flushing and greywater collected from the wash basins is also recycled to irrigate the building's mini wetland on the ground floor,” says Hamidah.

“Air conditioning is provided via radiant cooling slabs that have chilled water pipes (between 18°C and 20°C) embedded in them on each floor from level 1 to 7, but this system only provides 40 per cent of the cold air that we get. The remaining 60 per cent is taken care of by the air-handling unit, a type of ventilation that allows fresh air from outside (filtered and pre-cooled) to flow through the building,” she shares.

There is no doubt that the building sets the standard for future green and sustainable constructions – annual savings stand at 63 per cent for electricity usage and 65 per cent for water usage while carbon emissions have been reduced by 72 per cent.

Statistics indicate that the building's efficiency helped the Energy Commission save RM924,000 between 2013 and 2015. “While the initial capital outlay to construct a green building may be staggering, eco-friendly business solutions can be big on savings,” says Hamidah. —
AMALINA KAMAL

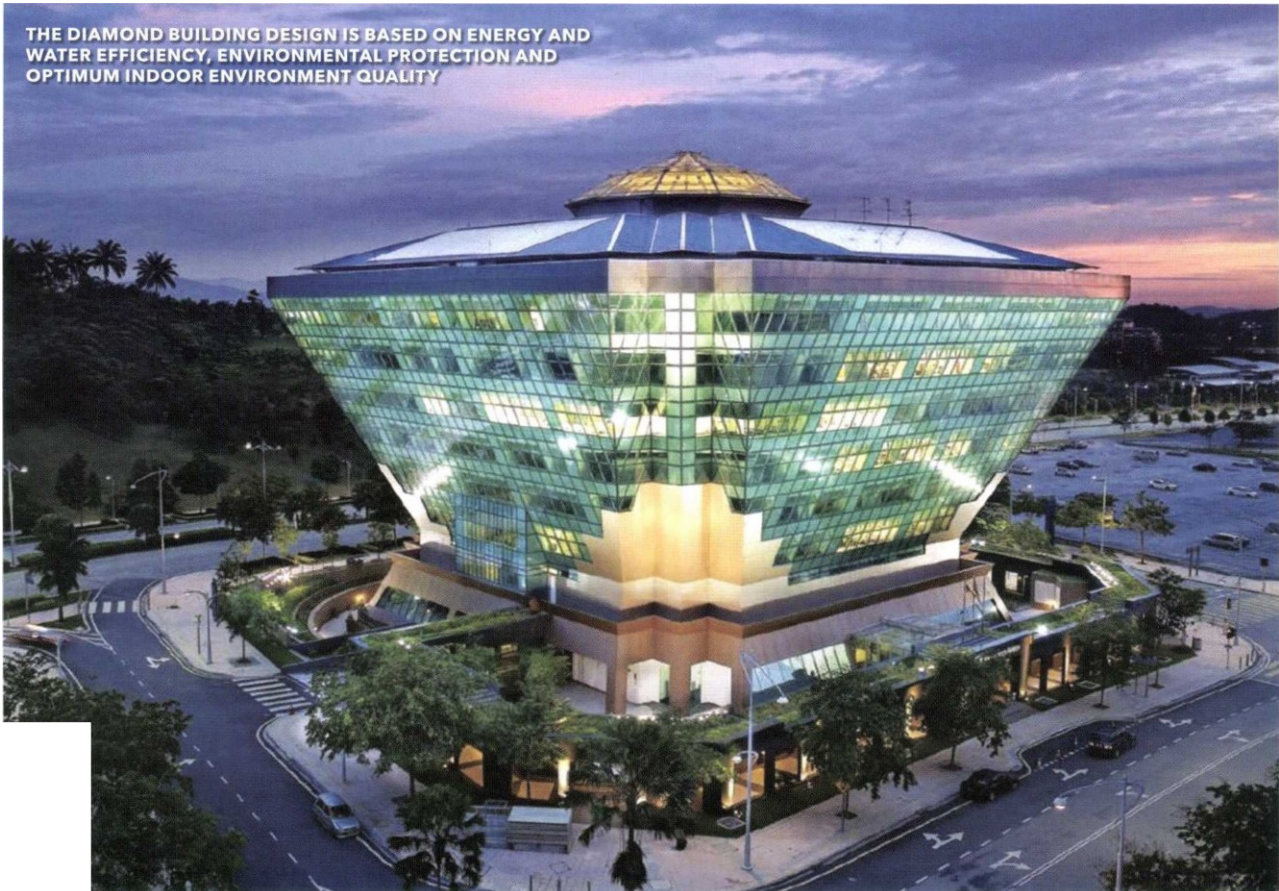
SUSTAINABLE STYLE

Driving along Kuala Lumpur's congested Jalan Ampang, one can't help but notice a modern-looking building almost hidden by tall trees and lush greenery. It stands out perhaps because it looks nothing like the soulless structures of bricks and mortar that surround it.

Welcome to the Greenhouse by Muir, an eatery

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that prides itself on being eco-conscious. No surprise then that part of the name is actually a tribute to the



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